

Re: The rusting of iron

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On 31 May 2004 20:51:24 -0700, farooq_w@hotmail.com (Mohammed Farooq) wrote:

*>Indeed the non-volatility of metal oxides is a valid point, but we
>still smell something "metallic" in our hands after _touching_ an old
>copper wire and an old rusted iron nail. Do you think that chemicals
>from our skin (as someone earlier suggested in that thread) form
>volatile compounds (N-, S-) with the metal which can be detected by
>our nose? Though I personally do not think that.*

My belief is that the characteristic smell arises from the interaction of skin oils, proteins, sweat, (etc) with either the metal or impurities within the metal. I really don't have any idea what these reactions might be. This belief is based upon elimination of what I consider to be more improbable: smelling the oxide itself. Look at it this way: the rusted piece of metal itself does not smell.

*>Coming to non-metals, which do not form oxides readily or are so
>unreactive that one can assume they would not react with something
>else in the air, do have characteristic odor, such as that of sulfur,
>or some metalloids like selenium and tellurium. What is our nose
>basically detecting sulfur, or selenium in the air or their compounds?*

I believe the compounds, not the elements themselves, have the characteristic odors.

Steve Turner